

Abstract

DETERMINING THE EQUIVALENCE OF TWO SETS OF SIMULTANEOUS LINEAR ALGEBRAIC EQUATIONS

A computer implemented method (200) is described for determining the equivalence of two sets of simultaneous linear algebraic equations. Each of said equations is of a form:

$$e_{i1}x_1 + e_{i2}x_2 + e_{i3}x_3 + \dots + e_{in}x_n = b_i$$

wherein x_j are unknowns, e_{ij} are coefficients and b_i are quantities, and defining the relationship between the unknowns within the set. The coefficients and quantities are known algebraic expressions. The unknowns are iteratively eliminated (250 to 280) from each of the sets of simultaneous linear algebraic equations until each of said equations are in the form:

$$(l_{ii})_k x_i = (r_i)_k$$

wherein l_{ii} and r_i are algebraic expressions, and $k=\{1;2\}$ indicate one of said sets that said equation is derived from. The products $(l_{ii})_1 * (r_i)_2$ and $(l_{ii})_2 * (r_i)_1$ are compared (300) for each of the unknowns. Only if the products match (310) for all the unknowns are the two sets of simultaneous linear algebraic equations equivalent (312). An apparatus (100) for performing the above method (200) is also provided.